

a theater Marine Logistics Command for the purpose of performing operational logistics functions to support tactical logistics requirements in the area of operations.

The focus of operational logistics is to balance the MAGTF deployment, employment, and support requirements to maximize the overall effectiveness of the force. Marine Corps operational logistics orients on force closure, sustainment, reconstitution, and redeployment of Marine forces in theater, which includes—

- 1 Providing operational-level command and control for effective planning and management of operational logistics efforts.
- 1 Establishing intermediate and forward support bases.
- 1 Supporting employment of georepositioned and maritime prepositioned assets.
- 1 Supporting arrival and assembly of forces in theater, and their reception, staging, onward movement, and integration.
- 1 Coordinating logistics support with joint, other-Service, and host nation agencies.
- 1 Reconstituting and redeploying MAGTFs and maritime prepositioning forces (MPFs) for follow-on missions.

c. Tactical Logistics

Tactical logistics includes organic unit capabilities and the combat service support (CSS) activities necessary to support military operations. Its focus is to support the commander's intent and concept of operations while maximizing the commander's flexibility and freedom of action.

Tactical logistics involves the coordination of functions required to sustain and move units, personnel, equipment, and supplies. These functions must deliver flexible and responsive combat service support to meet the needs of the forces engaged in operations. Therefore, the response time of tactical logistics is necessarily rapid and requires anticipatory planning to provide responsive support. Supply and maintenance activities gener-

ate materiel readiness; transportation resources move personnel, equipment, and supplies within the tactical area of operations; and general engineering support, health service support, and general services support contribute to mission accomplishment.

The MAGTF is specifically designed to possess the organic CSS organizations that it needs to accomplish assigned missions. Although no single element of the MAGTF has all of the operational and logistics capabilities needed to operate independently, each element has the capability for at least some basic self-support tasks. The combat service support element (CSSE) provides general ground logistics support to the command element (CE), ground combat element (GCE), and aviation combat element (ACE). The ACE possesses unique aviation logistics support capabilities essential for aircraft operations. Typically, the MAGTF deploys with accompanying supplies that enable it to conduct operations that range from 15 to 60 days (the period when resupply channels are being established and flow of supplies initiated).

1005. Principles of Logistics Support

There are seven principles of logistics support that apply to all three levels of logistics, and attaining these principles is essential to ensuring operational success. These principles, like the principles of war, are guides for planning, organizing, managing, and executing. They are not rigid rules, nor will they apply at all times. As few as one or two may apply in any given situation. Therefore, these principles should not be interpreted as a checklist, but rather as a guide for analytical thinking and prudent planning. These principles require coordination to increase logistics effectiveness. They are not stand-alone characteristics. The application of these principles by effective logisticians requires flexibility, innovation, and in maneuver warfare, boldness.

a. Responsiveness

Responsiveness is the right support in the right place at the right time. Among the logistics principles, responsiveness is the keystone. All other principles become irrelevant if logistics support does not support the commander's concept of operations.

b. Simplicity

Simplicity fosters efficiency in both the planning and execution of logistics operations. Mission-type orders and standardized procedures contribute to simplicity. Establishment of priorities and preallocation of supplies and services by the supported unit can simplify logistics support operations.

c. Flexibility

Flexibility is the ability to adapt logistics structure and procedures to changing situations, missions, and concepts of operation. Logistics plans and operations must be flexible to achieve both responsiveness and economy. A commander must retain command and control over subordinate organizations to maintain flexibility. The principle of flexibility also includes the concepts of alternative planning, anticipation, reserve assets, redundancy, forward support of phased logistics, and centralized control with decentralized operations.

d. Economy

Economy is providing sufficient support at the least cost without impairing mission accomplishment or jeopardizing lives. At some level and to some degree, resources are always limited. When prioritizing limited resources and allocating them sufficiently to achieve success without imbalance or inordinate excess, the commander is, in effect, applying economy.

e. Attainability

Attainability (or adequacy) is the ability to provide the minimum, essential supplies and services required to begin combat operations. The commander's logistics staff develops the concept of logistics support; completes the logistics estimate; and initiates resource identification on the basis of

the supported commander's requirements, priorities, and apportionment. An operation should not begin until minimum essential levels of support are on hand.

f. Sustainability

Sustainability is the ability to maintain logistics support to all users throughout the area of operations for the duration of the operation. Sustainability focuses the commander's attention on long-term objectives and capabilities of the force. Long-term support is the greatest challenge for the logistician, who must not only attain the minimum, essential materiel levels to initiate combat operations (readiness), but also must maintain those levels for the duration to sustain operations.

g. Survivability

Survivability is the capacity of the organization to protect its forces and resources. Logistics units and installations are high-value targets that must be guarded to avoid presenting the enemy with a critical vulnerability. Since the physical environment typically degrades logistics capabilities rather than destroys them, it must be considered when planning. Survivability may dictate dispersion and decentralization at the expense of economy. The allocation of reserves, development of alternative sources, and phasing of logistics support contribute to survivability.

1006. Functional Areas of Marine Corps Logistics

Logistics is normally categorized in six functional areas: supply, maintenance, transportation, general engineering, health services, and services. Logistics systems and plans are usually developed to address each functional area and logisticians commonly discuss support requirements and concepts in terms of these commodity areas. However, while each logistics functional area is essential in and of itself, all functions must be integrated into the overall logistics support operation to ensure total support of MAGTF operations.

Chapter 4

Logistics Planning

MCDP 4 defines logistics operating systems and command and control as core capabilities that are essential to our expeditionary nature. Integral to any logistics operating system are the sources of the logistics capability and the distribution procedures used to deliver the capability. MCDP 5 defines planning as the art and science of envisioning a desired future and creating effective ways to bring about that future. It is a preparation process that fully integrates all battlespace functions to achieve a desired result. Therefore, planning for logistics focuses on integrating logistics core capabilities with all battlespace functions at all levels in order to get to the fight, to sustain the fight, and to prepare for the next fight.

As a Service, the Marine Corps must fulfill its general Title 10 obligations to organize, train, and equip forces capable of performing a wide range of missions. As an operational force, MAGTFs must be prepared to execute missions and to respond to developing contingencies based on guidance from the supported combatant commander. Planning efforts at any level (strategic, operational, or tactical) must be fully integrated with planning at the other levels to ensure that all levels work together to achieve the common goal of mission success. Logistics planning results in—

- 1 Building the MAGTF's ability to support national interests and mission accomplishment.
- 1 Positioning a MAGTF globally, then within a theater, and, ultimately, within a battlespace.
- 1 Sustaining a MAGTF throughout training, deployment, employment, and reconstitution.

4001. Planning at the Levels of War

Strategic plans cover the overall conduct of a war, whether the focus is on wartime execution or peacetime preparation. Campaign plans, normally prepared at the operational level of war, cover a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and place. Tactical plans generally cover a single military evolution. Logistics planners also prepare logistics functional plans to support integrated plans.

Logistics planning is the combination of coordinated processes at the strategic, operational, and tactical levels used to calculate materiel and services requirements, identify sources of the required materiel and services, and determine the means to provide logistics support to the supported forces. It involves earmarking existing assets for specific potential uses and identifying deficiencies in current support capabilities for corrective action.

Planning techniques and procedures will vary with the time available. Force planning at the strategic level (i.e., organizing, training, and equipping the Armed Services) is based on 2- to 6-year cycles in the Joint Strategic Planning System (JSPS) and PPBS. Force planning at the operational level uses deliberate planning processes that span 2-year cycles if time is not a critical factor. When the time available for planning is short (sometimes as little as a few hours or days) because of a need to support the near-term deployment and/or employment of military forces, the

planner uses crisis action planning or time-sensitive operational planning procedures. JOPES prescribes joint operation planning techniques and procedures that supports the planning process. Marine organizations use the Marine Corps Planning Process (MCP) to prepare their plans and orders, as well as Marine Corps input to JOPES.

4002. Administrative and Operational Planning

At all levels of war, Marine Corps logistics planning involves activities in both administrative and operational command channels. In the context of coordinated DOD planning systems, these systems assist in furnishing the best possible mix of missions, forces, equipment, and support to the combatant commanders. They support resolution of issues in the national interest at the strategic and operational levels that involve the Marine Corps supporting establishment (through Headquarters, Marine Corps) and operating forces or Reserves (through the Commander, Marine Corps Forces). While strategic and operational planning may seem transparent, perhaps even irrelevant, they provide the basis for the tactical employment of the MAGTF at the tactical level.

4003. Planning for Resources

Planning for a single mission or contingency is relatively straightforward but rarely the norm. Multiple, concurrent operations frequently occur whose requirements conflict and compete for the same resources and constrain preparations for response. Logistics planners accommodate potential or actual competing requirements for resources by apportioning or allocating available resources, establishing distribution priorities, and anticipating demands.

a. Apportion and Allocate Resources

Apportionment and allocation decisions establish how much of a particular resource is available to the supported commander. Apportionment is the *planned* distribution of limited resources among

competing requirements; it is a fundamental feature of deliberate planning. In time-sensitive planning, apportionment blends into allocation, which is the *actual* distribution of limited resources among competing requirements. Apportionment and allocation are processes that divide limited resources, but they may not always satisfy projected consumption or provide desired sustainment levels. Resolution of shortfalls may require either a commander's intervention to obtain increased apportionments and allocations or modifications to the concept of operations to reduce consumption requirements. Identification of potential apportionment support shortfalls in both operation and support plans is critical to ensure the logistics feasibility of an operation plan.

b. Establish Distribution Priorities

The commander must establish distribution priorities for the apportioned or allocated logistics resources. These priorities determine *who* will receive *what* resources, *when*. Priorities are initially based on the concept of operations and modified as the situation develops.

c. Anticipate Demands

Analysis of assigned missions and tasks to determine resources, requirements, and shortfalls reduces uncertainty. It cannot entirely remove the impact of unanticipated support demands, but it can minimize their extent and potential effect on operations. Additionally, planning gives commanders and their staffs the opportunity to assess the area of operation's environment, the assigned forces' and the potential opposition's characteristics, and the nature of the mission. This assessment should enable commanders and their staffs to develop flexibility in planning that addresses most unanticipated demands.

4004. Principles and Considerations

The principles of logistics defined in chapter 1—responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability—are universal constants that apply equally to all

aspects of logistics. In addition to these principles, other logistics considerations exist that commanders and logistics planners must judiciously apply to particular situations. These considerations will not dictate a specific course of action, but, if used wisely, they will help the planner maximize the effectiveness and efficiency of logistics operations. Logistics considerations are discussed in the following subparagraphs.

a. Integrated Planning

Operations cannot be conducted successfully without adequate logistics support. Logistics support cannot be effective if it is planned without detailed coordination with the functions it supports. Although the need for integration is obvious, staffs are typically organized on a functional basis that inhibits this coordination. Command oversight is necessary to ensure that essential functional integration occurs to produce one plan.

b. Forward Focus

The focus of logistics support is from the continental United States into the theater and forward, and from higher levels of support to lower levels. A system of continuous replenishment may take the form of either automatic (push) or requisitioning (pull) replenishment. Commanders and planners must devise a balance of push and pull replenishment that efficiently and effectively supports an operation and relieves the forward commanders of logistics support details without impairing their control of their organic logistics support capabilities. The replenishment system must effectively use the available transportation to maximize throughput, minimize expenditure of resources in the pipeline, and reduce command and control of logistics.

c. Logistics Constraints

Logistics resources are usually constrained. Therefore, their use must be disciplined to accommodate these constraints. At the strategic level, these limitations are either fiscal constraints or the unavailability of materials, industrial facilities, and skilled labor. Long lead times for mobilization and deployment can also affect the strategic

concentration of forces and supplies within a theater.

At the operational and tactical levels, common limitations are attributed to—

- ┆ Inadequate transportation means and port capacities.
- ┆ Insufficient quantities of certain munitions, equipment, and critical spare parts.
- ┆ Lack of trained logistics personnel.
- ┆ Failure to plan for adequate or interoperable command, control, communications, and computer systems.

d. Standardization

Standardization is the commonality of equipment and uniformity of procedures. Standardized procedures make complex tasks easier to execute in a timely way. Commonality of equipment reduces the number of different maintenance procedures involved and reduces the amount and type of support equipment. Standardization promotes economy by reducing unnecessary redundancy. It also promotes productivity, flexibility, and system reliability.

e. Centralization Versus Decentralization

Centralized control and decentralized execution are ideals sought in logistics support operations. If achieved, support will be responsive, economical, and flexible. Often, however, a balance between centralization and decentralization is difficult to achieve. Control may suffer because it is fragmented, or support may fall short because services and materiel are too concentrated. Consequently, commanders and their staffs at all levels must use judgment and experience to achieve the optimal mix of centralized control and decentralized execution based on the circumstances. Centralized control is most effective at the strategic level. It draws on the existing infrastructure, established procedures, and a stable environment. The degree of centralization varies at the operational level as forces can be fragmented, sometimes over great distances, and operations take place under primitive, expeditionary conditions.

At the tactical level, the degree of centralization is determined by the mission and concept of operations—factors that may override considerations of a purely logistical nature.

f. Expenditure and Consumption

Commanders, operators, and logisticians must understand the difference between consumption and expenditure in order to enhance both responsiveness and economy in logistics support operations. Expenditure will always be greater than consumption because expenditure represents the sum of consumption, pipeline quantities, safety stocks, pilferage, waste, and loss. When determining requirements, planners must distinguish between consumption and expenditure. The supported commander submits requirements based on anticipated consumption. The supporting commander estimates requirements based on anticipated expenditures. While the supported commander must strive to identify consumption rates accurately, the supporting commander must constantly strive to refine expenditure rates. Usage factors require careful, constant reevaluation to ensure that they are based on current data.

g. Alternative Planning

Logistics alternative planning establishes more than one option to provide support using equivalent means. Alternative planning can involve substitute modes of transportation, sourcing supplies from different locations, or reassigning support tasks between different organizations. This requires a certain degree of planned redundancy but does not imply intentionally oversupplying or apportioning and allocating an excessive reserve. Alternative planning is essential to flexible support when fixed resources are apportioned or allocated for support of a particular operation.

h. Echelonment

Echelonment is the preplanned provision or positioning of resources to ensure uninterrupted logistics support. Echelonment can cause variation in the level of support capabilities available in a given location at a specified time. It must be considered when developing task-organized elements to accomplish specific functions. Echelonment plan-

ning considers the phasing of logistics support in both time and location to maximize the effectiveness of logistics operations. If properly used, echelonment contributes to the responsiveness, economy, and flexibility of logistics support operations and to the survivability and sustainability of Marine Corps forces.

i. Logistics Reserves

Logistics can be a pacing factor at the operational level of war. While the adequacy of logistics to sustain operations governs the rate at which the campaign can proceed, the presence of a reserve capability may determine whether opportunities are exploited or are missed. Just as strategic and operational reserves are necessary to exploit tactical or operational success or to respond to new contingencies, it is also necessary to coordinate and establish reserves of logistics resources that can be committed only by the Commander, Marine Corps Forces, at the strategic, operational, and tactical levels. Logistics reserves are established for possible consumption by the supported forces, but their intent is not to cover expenditures in the supporting force's pipeline. It is important to note that building a logistics reserve should not take priority over satisfying imminent or immediate support requirements.

j. Redundancy

Redundancy is the duplication of systems, units, or functions that provides alternate means of support if there is an interruption, failure, or loss of capability. Redundant capabilities help prevent disruption of support. This concept may be perceived as a contradiction of economy. However, properly planned redundancy can provide assurance of continued support. It can also contribute to enhanced responsiveness. Although redundancy improves flexibility and survivability, redundancy of systems, units, or functions should be limited to only what is essential to accomplish the mission.

k. Conservation

Conservation avoids waste and is one of the components of economy. Because limits always exist on available supplies and services, commanders

must continuously practice and enforce conservation. Commanders also enforce conservation to improve overall flexibility by making the conserved resources available elsewhere or at a later time. Means of conservation may include recycling of materiel, proper use of salvage, and local rebuilding of spares when authorized.

I. Austerity

Austerity avoids excess and is also a component of economy. Austerity entails providing just enough materiel or services to accomplish the mission. The objective of the logistics planner is to provide for the consumers' needs, rather than their wants. Austerity will not eliminate a commodity or service, but it will reduce it to absolute essentials. Commanders should encourage austerity even in times of plenty. Wide swings between wasteful overabundance and inadequate support jeopardize mission accomplishment.

m. Throughput

Throughput is a function of the distribution system. It is a measure of the amount of materiel passing through a processing point within a specified period of time. The distribution system is the pipeline through which supplies and services flow from the supporting command to the supported command. The flow cannot begin until requirements are identified and supplies and services procured. Until the flow of materiel begins, the MAGTF relies on its organic sustainment that deploys with it. As procurement actions are accomplished, goods and services begin to flow, and eventually the flow reaches a state that matches expenditures. Maintenance of throughput is affected by lead time and control.

From the perspective of the supported force, lead time is the period between requesting and receiving the supplies or services identified as support requirements. On occasion, the flow of the throughput system is interrupted and lead times must be gauged to anticipate such delays. Accompanying supplies and services must be adequately sized and timing of requisitions anticipated so that capabilities overlap or at least cover requirements throughout the lead time.

Control of the throughput process (flow) is the single most demanding task for supporting forces. Supporting forces must be able to adjust the flow of supplies and services to expedite critical supplies and services as necessary. Control measures must allow for the accumulation of lower priority supplies and services at holding points or their diversion to forces that have higher priorities. The supported commanders and their staffs integrate requirements and capabilities during planning and participate in controlling the flow of supplies and services support during execution.

4005. Mission and Task Analysis

Mission and task analysis is the foundation of all planning. It is the basis for preparing initial estimates of supportability and draft logistics annexes or for completing orders for logistics operations. Commands at all levels receive orders from higher commands that specify an operational mission and implementation tasks. Logisticians assigned to both supported and supporting commands must apply their own functional area expertise to the integrated staff effort to analyze these missions and tasks in the context of the higher headquarters commander's intent, the higher headquarters' mission, and the initial commander's orientation. Logisticians parallel efforts of the other functional area experts on the planning staff in identifying logistics-specific tasks. These tasks are either specified, implied, or mission-essential. Specified tasks are stated explicitly in a higher headquarters directive. Implied tasks are not stated, but they are obviously required for mission accomplishment. Mission-essential tasks must be completed for the command to be successful.

During planning, logisticians must identify the constraints or restraints that could limit a unit's freedom of action and identify, for the unit, certain criteria that must be met before taking a certain action (e.g., boundaries, timing, coordination requirements, preconditions, mandated stockage levels, resource apportionments, and allocations). Assumptions identify critical factors that affect the course of action, assigned mission, or task. Logisticians resolve resource shortfalls affecting

the assigned mission or task through redistribution, replenishment, modification to the course of action, or assignment of tasks.

4006. Factors Affecting Logistics Planning

A variety of factors influence logistics planning efforts to determine precise logistics support requirements (i.e., what, when, where). These factors affect logistics estimates, annexes, and plans for logistics support operations. At all levels and in all commands, staffs must take these factors into consideration while preparing logistics estimates and annexes. Commanders of supporting logistics organizations and their staffs also prepare complete plans for logistics support operations based on these factors.

Many logistics support requirements can be calculated mathematically based on the number of people and types or quantities of equipment to be supported for a specified period of time over known distances. The basis for estimating other support requirements is less precise, requiring judgment and experience to develop reasonable predictions. Information processing systems have greatly facilitated requirements estimation by allowing planners to merge, categorize, and summarize large quantities of data. However, in the end, all information systems reflect the inputs of their users, and logisticians must review input data and underlying assumptions carefully, examine planning output critically, and apply common sense to any plan before it is implemented.

a. Intelligence

Intelligence resources are a source of vital information for logistics planners. Characteristics of the area of operations and the area of interest can assist, as well as hinder, accomplishment of the logistics support mission. The potential effects of enemy force strengths, locations, and capabilities, in addition to the effects of weather and terrain on logistics operations, can be significant. Logistics planners must circumvent impediments and build survivability into their logistics organizations. Lo-

gisticians must also take into account the existing infrastructure (e.g., road, rail, and communications networks; ports and airfields; storage and maintenance facilities) that could be used to enhance the effectiveness of support operations.

b. Personnel

Personnel support planning begins with accurate identification of the number and location of personnel (by gender) to be supported. This drives numerous requirements, which include but are not limited to feeding, billeting, and transportation. In fluid, fast-moving situations, especially during deployment or redeployment, it can be very difficult to precisely establish the population density needing support at a particular place and time. Command attention may be necessary to ensure that support capabilities correspond to personnel requirements.

c. Equipment Density, Distribution, and Characteristics

The quantity and type of equipment, equipment location, equipment technical specifications, and information regarding how equipment is employed are critically important to planners. Requirements for fuel, batteries, spare parts, maintenance, salvage, and ammunition are all based on this information.

d. Historical Data

Historical data collected from past operations provides a foundation for calculating current support requirements. Much of this historical data is available in table and chart form in a digital data format. Although it is unlikely that a comprehensive template of previous operations is available or universally applicable to the current operation being planned, historical data can be very useful in establishing the extent of support that the operation may require.

e. Modeling and Simulation

Advances in computer technology and analytical and gaming software make it increasingly possible to run models and simulations of proposed operations to approximate how an operation may unfold. Although this technique is not completely

predictive, it is another way of establishing tentative support requirements and is more comprehensive and convenient than traditional calculation methods. Furthermore, models and simulations can be tremendously useful in effectively demonstrating the possible impact of proposed changes in force structure or concept of operation.

f. Experience and Intuitive Analysis

Commanders and logisticians must apply judgment based on experience and sound staff work to assess risk and ensure that a proposed solution to a support problem is both feasible and practical. While the planning factors discussed in this publication contribute to an increased level of certainty, the ability to analyze the incomplete picture and make a sound decision demands firm grounding in known capabilities and requirements.

4007. Coordination in Planning

There is extensive coordination and some overlap of functions between the strategic-operational and operational-tactical levels of logistics support planning.

a. Strategic-Operational Level

At the strategic-operational level, logistics planning focuses on JSPS, PPBS, and JOPES. JSPS and PPBS define national interests and the structure, equipment, and organization that U.S. military forces need to protect these interests. JOPES defines national actions; e.g., mobilization and deployment or employment of forces to protect those interests. They are cyclical, continuous, overlapping evolutions that regularly produce updated visions of general military requirements, the means for satisfying those requirements, and specific operation planning tasks or contingency response direction to the combatant commanders.

b. Operational-Tactical Level

Within the theater-strategic and operational-tactical levels, JSPS and PPBS guidance and resources are developed into specific joint operation plans

that are prepared in accordance with JOPES. The Marine Corps forces component and its subordinate MAGTFs prepare their input to JOPES, as well as their own operation plans and operation orders, by using MCPP. Commanders and staff logisticians prepare taskings and supportability estimates from which subordinate commanders and their staffs develop their own estimates, plans, and orders. GCCS (with its tactical combat operations interface) is the host for this work in JOPES. When time is not a critical factor, the deliberate planning process is used. When time available for planning is short, planners use crisis action planning procedures.

4008. Planning Systems

The purpose of joint operation planning is to effectively use the military arm of national power to protect U.S. interests or implement national policy. Joint planning consists of a systematic series of actions or procedures to determine the best method of accomplishing assigned tasks. The following subparagraphs address key systems used by DOD for planning (JSPS, PPBS, and JOPES), command and control (GCCS), and the Marine Corps planning system (MAGTF II/LOGAIS).

a. Joint Strategic Planning System

In general, JSPS is a formal series of events, activities, and guidance conducted on a biennial cycle by which the Chairman, Joint Chiefs of Staff, discharges responsibility to accomplish the following tasks:

- 1 Prepare strategic plans.
- 1 Assist the President in giving strategic direction to the Armed Forces.
- 1 Review Service programs and conduct risk assessments.
- 1 Set guidance and apportion resources for contingency planning.
- 1 Furnish planning continuity for the strategic planning process.
- 1 Provide guidance to PPBS.